CLAIMS

1. A gas reformer, which is driven at a temperature of 600-900°C for recovery of hydrogen from hydrocarbon, comprising:

a plurality of hydrogen-separating members each having a substrate, which is made of a ferritic stainless steel containing 16-25 mass % Cr, Ti and/or Nb at a ratio not less than (C+N)×8 and optionally one or more of rare earth metals up to 0.1 mass %, and perforated with a plurality of holes for passage of gas, coated with a hydrogen-permeating membrane at its external surface;

a double-pipe having inner and outer walls, between which said hydrogen-separating members are inserted; and

a catalyst for decomposition of hydrocarbon gas put in a cavity defined by said inner and outer walls of said double-pipe,

wherein hydrocarbon gas is decomposed with a combustion heat of a fuel fed to an inner space of said double-pipe, and hydrogen gas as a decomposition product selectively passes through said hydrogen-permeating membranes to an outside.

2. A gas reformer, which is driven at a temperature of 450-600°C for recovery of hydrogen from hydrocarbon, comprising:

a plurality of hydrogen-separating members each having a substrate, which is made of a ferritic stainless steel containing Cr up to 15 mass % and Ti and/or Nb at a ratio not less than (C+N)×8, and perforated with a plurality of gas-permeable holes, coated with a hydrogen-permeating membrane at its outer surface;

a double-pipe having inner and outer walls, between which said membranes are inserted; and

a catalyst for decomposition of hydrocarbon gas put in a cavity defined by said inner and outer walls of said double-pipe,

wherein hydrocarbon gas is decomposed with combustion heat of a fuel fed to an inner space of said double-pipe, and hydrogen gas as a decomposition product selectively passes through said hydrogen-permeable membranes to an outside.